

WHAT IS CLAIMED IS:

- 1 1. A rechargeable battery comprising:
2 a housing having a housing wall;
3 at least one cell in the housing;
4 a contact element electrically connected to the at least one cell;
5 a plastic sealing element extrusion-coated on the contact element, the
6 sealing element comprising a supporting surface which lies flat against the housing
7 wall at an interface;
8 wherein the supporting surface is transmission laser-welded to the
9 housing wall at the interface; and
10 wherein one of the supporting surface and the housing wall is at least
11 partially transparent for the laser beam and the other of the supporting surface and the
12 housing wall is absorbent for the laser beam.
- 1 2. The rechargeable battery of Claim 1, wherein the contact element is a
2 pole bolt that extends through the housing wall.
- 1 3. The rechargeable battery of Claim 1, wherein the contact element is a
2 pole bolt that extends through the housing wall.
- 1 4. The rechargeable battery of Claim 1, wherein the contact element is a
2 cell connector that connects a first cell to a second cell.
- 1 5. The rechargeable battery of Claim 1, wherein the housing wall is at
2 least partially transparent for the laser beam and the supporting surface is absorbent
3 for the laser beam.
- 1 6. The rechargeable battery of Claim 1, wherein the supporting surface is
2 at least partially transparent for the laser beam and the housing wall is absorbent for
3 the laser beam.

1 7. The rechargeable battery of Claim 1, wherein the interface between the
2 supporting surface and the housing wall comprises a weld bead that is circumferential
3 around the contact element.

1 8. The rechargeable battery of Claim 1, wherein the contact element has a
2 circumference and comprises circumferential projections on its circumference.

1 9. The rechargeable battery of Claim 8, wherein the plastic sealing
2 element completely surrounds the projections.

1 10. The rechargeable battery of Claim 9, wherein the contact element
2 comprises circumferential depressions on its circumference.

1 11. The rechargeable battery of Claim 10, wherein the plastic sealing
2 element completely fills the circumferential depressions.

1 12. The rechargeable battery of Claim 1, wherein at least one of the
2 supporting surface and the housing wall comprise at least one of an additive and a
3 filler to improve absorption characteristics.

1 13. The rechargeable battery of Claim 12, wherein at least one of the
2 supporting surface and the housing wall comprises a colored layer which absorbs laser
3 light to improve the absorption characteristics.

1 14. The rechargeable battery of Claim 1, wherein the contact element
2 comprises grooves for holding the housing wall.

1 15. The rechargeable battery of Claim 14, wherein the contact element is
2 clamped to the housing wall in a liquid-tight manner using the grooves in the area of
3 an aperture through the housing wall.

1 16. A method for producing a rechargeable battery comprising:
2 providing a rechargeable battery comprising a housing wall, a plurality
3 of cells, and a plurality of sealed contact terminals, the contact terminals being

4 electrically connected to at least one of the cells and being passed through the housing
5 wall;

6 extrusion coating the contact terminals with a plastic sealing element
7 having a supporting surface which is configured to rest flat against the housing wall;
8 providing the supporting surface of the plastic sealing element in
9 contact with the housing wall; and

10 transmission laser welding the supporting surface to the housing wall
11 with a laser beam;

12 wherein the housing wall is at least partially transparent for the laser
13 beam and the supporting surface is reflective for the laser beam;

14 wherein the laser beam strikes the supporting surface through the
15 housing wall to weld the supporting surface to the housing wall such that a weld bead
16 is formed around the contact element and on a contact surface between the supporting
17 surface and the housing wall.

1 17. The method of Claim 16, wherein the plastic sealing element comprises
2 a plastic material, and further comprising introducing at least one of an additive and a
3 filler into the plastic material to improve absorption characteristics of the plastic
4 sealing element.

1 18. The method of Claim 16, further comprising applying a colored layer
2 which absorbs laser light to at least one of the supporting surface and a surface of the
3 housing wall which is intended to make contact with the supporting surface.

1 19. The method of Claim 16, further comprising introducing grooves into
2 the plastic sealing element to hold the housing wall and provide liquid-tight clamping
3 of the plastic sealing element to the housing wall in the area of an aperture through the
4 housing wall.